

Amendments to the Claims:

The following listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Currently Amended) ~~An optical apparatus comprising, a frequency stabilised linear HeNe gas laser having an Ne content of an Ne²⁰ isotope and an Ne²² isotope in substantially equal proportions, the apparatus in use having optical feedback toward the laser causing, at least 0.1% of the light output of the laser to be returned toward the laser~~ a frequency stabilized linear HeNe gas laser having a resonant cavity, and optical elements, wherein the resonant cavity is filled with a gas including an He content and an Ne content, the Ne content comprising an Ne²⁰ isotope and an Ne²² isotope in substantially equal proportions and wherein the optical elements during operation of the optical apparatus cause at least 0.1% of the light output of the laser to be returned towards the laser.
2. (Canceled)
3. (Currently Amended) ~~An interferometric displacement determination device comprising a frequency stabilised linear HeNe gas laser having an Ne content of an Ne²⁰ isotope and an Ne²² isotope in substantially equal proportions, the apparatus in use having optical feedback toward the laser causing, at least at intervals, at least 0.1% of the light output of the laser to be returned toward the laser, the device being any one of a single beam, a plane mirror, a long range, or an optical fibre type~~ having an optical apparatus comprising, a frequency stabilized linear HeNe gas laser having a resonant cavity, and optical elements, wherein the resonant cavity is filled with a gas including an He content and an Ne content, the Ne content comprising an Ne²⁰ isotope and an Ne²² isotope in substantially equal proportions and wherein the optical elements during operation of the optical apparatus cause at least 0.1% of the light output of the laser to be returned towards the laser, the device being any one of a single beam, a plane mirror, a long range, or an optical fibre type.

4. (Currently Amended) An interferometric displacement determination device as claimed in claim 3 wherein the Ne^{20} and Ne^{22} isotope content is in the ratio of from about 60:40 to about 40:60 respectively.
5. (Currently Amended) An interferometric displacement determination device as claimed in claim 3 wherein the HeNe gas ratio is from about 80:20 to about 90:10 respectively.
6. (Currently Amended) An optical apparatus ~~or interferometric displacement determination device~~ as claimed in claim 1 wherein the laser achieves a frequency stabiliszation below 1×10^{-7} (Frequency noise/Absolute frequency) and the optical feedback is in the range of 0.1% to 10% of the light output of the laser.
7. (Currently Amended) An optical apparatus ~~or interferometric displacement determination device~~ as claimed in claim 1 wherein the apparatus or the device includes an optical fibre element.
8. (Currently Amended) An optical apparatus ~~or interferometric displacement determination device~~ as claimed in claim 6 wherein the method of frequency stabiliszation employed is modal control.
9. (Currently Amended) An optical apparatus ~~or interferometric displacement determination device~~ as claimed in claim 78 wherein the modal control is control of the ratio of the intensities of two laser modes.
10. (New) An interferometric displacement determination device having an optical apparatus comprising, a frequency stabilized linear HeNe gas laser having a resonant cavity, and optical elements, wherein the resonant cavity is filled with a gas including an He content and an Ne content, the Ne content comprising an Ne^{20} isotope and an Ne^{22} isotope in substantially equal proportions and wherein the optical elements during operation of the

optical apparatus cause at least 0.1% of the light output of the laser to be returned towards the laser.

11. (New) A polarization measurement device having an optical apparatus comprising, a frequency stabilized linear HeNe gas laser having a resonant cavity, and optical elements, wherein the resonant cavity is filled with a gas including an He content and an Ne content, the Ne content comprising an Ne²⁰ isotope and an Ne²² isotope in substantially equal proportions and wherein the optical elements during operation of the optical apparatus cause at least 0.1% of the light output of the laser to be returned towards the laser.

12. (New) A spectroscopic analysis apparatus having an optical apparatus comprising, a frequency stabilized linear HeNe gas laser having a resonant cavity, and optical elements, wherein the resonant cavity is filled with a gas including an He content and an Ne content, the Ne content comprising an Ne²⁰ isotope and an Ne²² isotope in substantially equal proportions and wherein the optical elements during operation of the optical apparatus cause at least 0.1% of the light output of the laser to be returned towards the laser.

13. (New) A heterodyne frequency measurement device having an optical apparatus comprising, a frequency stabilized linear HeNe gas laser having a resonant cavity, and optical elements, wherein the resonant cavity is filled with a gas including an He content and an Ne content, the Ne content comprising an Ne²⁰ isotope and an Ne²² isotope in substantially equal proportions and wherein the optical elements during operation of the optical apparatus cause at least 0.1% of the light output of the laser to be returned towards the laser.
